



Environmental Dashboard

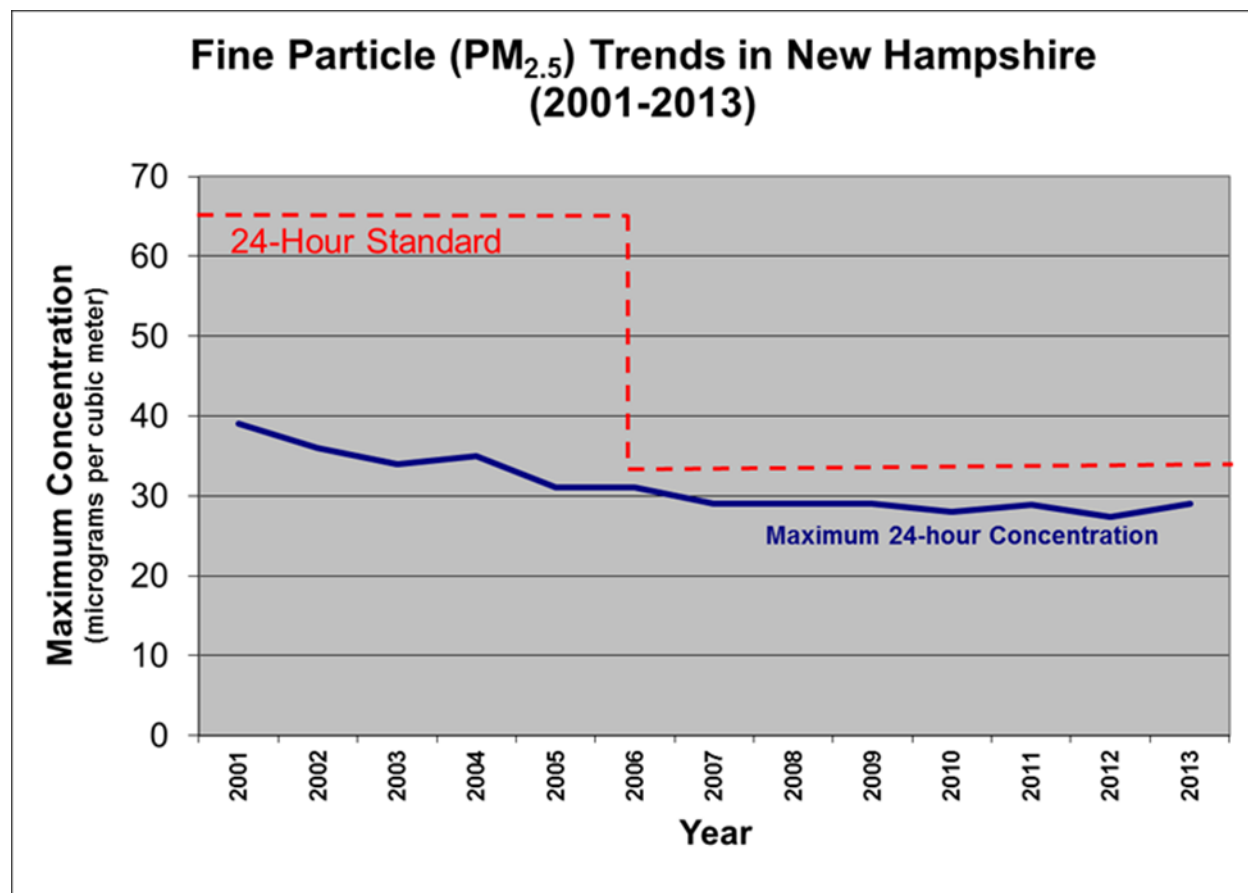


Trends in New Hampshire's Environment Air Pollution – Fine Particle Pollution

Particle pollution is a mixture of solids and liquid droplets suspended in air. Fine particle pollution, or $PM_{2.5}$, describes particulate matter that is 2.5 micrometers in diameter and smaller. (For reference, the diameter of a human hair is 70 micrometers in diameter, or 28 times greater in diameter than fine particle matter.) Studies have shown a significant association between exposure to fine particle pollution and serious health issues, which is why this air pollutant is closely monitored. Very small particles can get deep into the lungs and even cross over into the blood stream, causing heart problems. There are many sources of fine particles, and their chemical composition depends on location, time of year and weather. Particle pollution is a result of burning various fuels, including wood. It also forms in the air when hot gasses cool and condense into solid matter or when certain chemical reactions take place and form small particles.

Current Condition

Fine particulate levels have decreased on a statewide basis since the early 1990s. Currently, 100% of the state is meeting the 2006 fine particle National Ambient Air Quality Standard.



SOURCE: DES Air Resources

Explanation of Indicator and Trend

Fine particle levels have decreased on a statewide basis since the early 1990s when an amendment to the Clean Air Act required state, regional and federal planning to improve air quality. Because New Hampshire is considered a downwind state, much of the gains in improved air quality have come as the result of regional and national coordination, in combination with our own pollution reduction programs. Much of the improved air quality is because of reduced pollution emissions from power plants and large industry, cleaner car and truck fleets, cleaner fuels, and reduced volatility of solvent-based products. The state still has challenges, notably in valley communities where wood burning is common for residential heating. These locations are prone to periods where the winds become calm and locally produced air pollution becomes trapped near ground level during which PM_{2.5} levels can climb.

Health studies have shown a significant association between exposure to fine particle pollution and premature death from heart or lung disease. Fine particles can aggravate heart and lung diseases and have been linked to effects such as cardiac arrhythmias, heart attacks, asthma attacks, and bronchitis.

How Does DES Address This?

DES has an air pollution monitoring network spread out across the state. There are eight air monitoring stations that collect data on fine particle concentrations. When high particle pollution levels are predicted in any part of the state, DES declares air quality action days to advise people of the possible threat to their health.

In addition, DES works locally, regionally and nationally to reduce fine particle pollution. By working with regional and national organizations, DES helps to reduce the fine particle pollutants that are transported into our state. Locally, DES provides education to promote efficient residential wood burning to decrease the likelihood of impacts to valley communities. DES also promotes energy efficiency initiatives to reduce local emissions from power plants.

Fine particle pollution standards are set by the US Environmental Protection Agency. In 2006 the standard was lowered to better protect human health. The Clean Air Act requires EPA to periodically review standards. If the standard were to be lowered again, New Hampshire could be out of compliance with the new standard. If New Hampshire were out of compliance, EPA would likely impose stricter controls on industrial facilities and additional planning requirements on transportation projects. For these reasons, DES continues to work on the reduction of fine particle pollution.

For More Information, Including What You Can Do to Help

Particle Pollution

<http://www.des.state.nh.us/organization/divisions/air/do/asab/pm/index.htm>

Current Fine Particle Levels in New Hampshire <http://www2.des.state.nh.us/airdata/>

DES Air Pollution Forecast for New Hampshire

http://www2.des.state.nh.us/airdata/air_quality_forecast.asp

What Can I Do to Reduce Air Pollution?

<http://www.des.state.nh.us/organization/divisions/air/tsb/ams/aqmdp/share.htm>

DES Regional Haze Program

<http://www.des.state.nh.us/organization/divisions/air/do/asab/rhp/index.htm>

Particle Pollution/Particulate Matter (PM), USEPA <http://www.epa.gov/air/particlepollution/>

Health Effects of Particle Pollution, USEPA

<http://www.epa.gov/airquality/particlepollution/health.html>